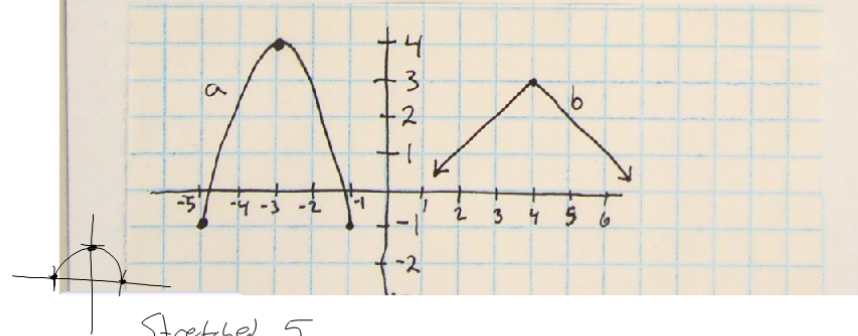


① Solve for  $y$  in  $(y+4)^2 - 1 = x+3$ .  
Sketch a graph and find the domain and range

② Solve  $f(x) = -3(x+2)^2 + 5$  for  $x$  if  $f(x) = -70$

③ Find the equations of each graph below:



Stretched 5  
wider by 2 times  
down 1  
lft 3

$$y = -\left|x - 4\right| + 3$$

$\frac{1}{2}$  pt.       $\frac{1}{2}$  pt.       $\frac{1}{2}$  pt.

$$y = 5\sqrt{1 - \left(\frac{x+3}{2}\right)^2} - 1$$

$\frac{1}{2}$  pt.       $\frac{1}{2}$  pt.       $\frac{1}{2}$  pt.       $\frac{1}{2}$  pt.

free  $\frac{1}{2}$  pt.

$$y = 5\sqrt{1 - \left(\frac{x+1.5}{2}\right)^2} - 1$$

$$(y+4)^2 - 1 = x + 3$$

+1            +1

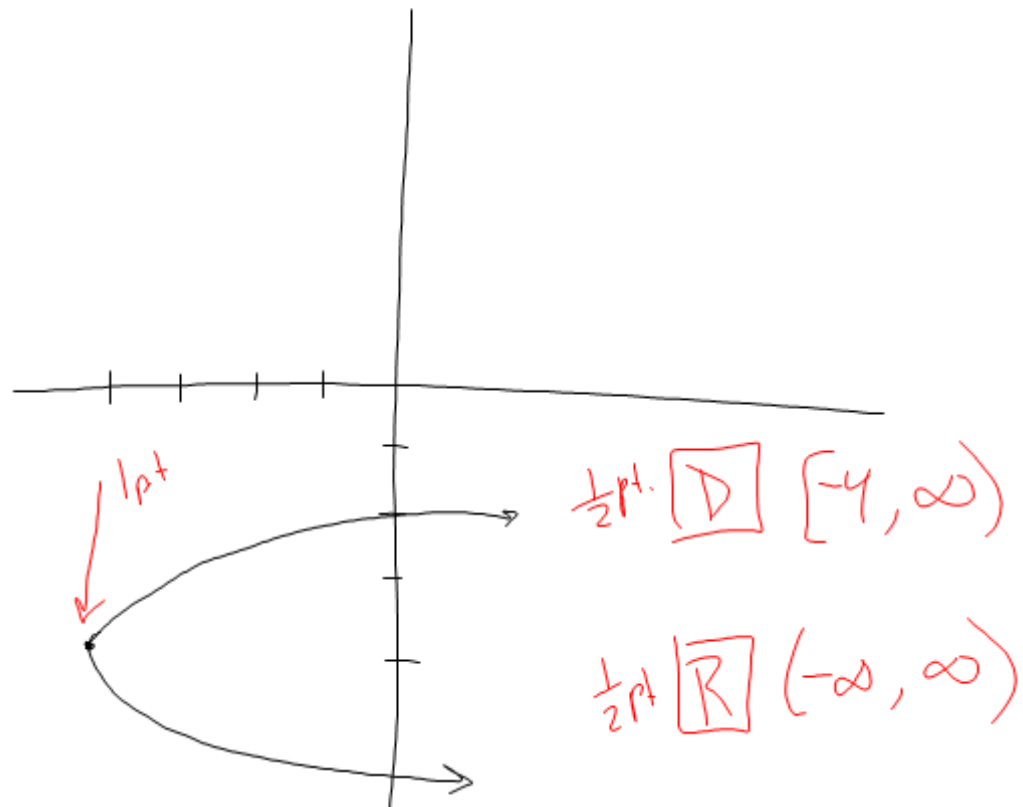
$$\sqrt{(y+4)^2} = x+4$$

$$y+4 = \pm \sqrt{x+4}$$

-4                    -4

$$y = \pm \sqrt{x+4} - 4$$

$\uparrow$  1 pt.       $\uparrow$   $\frac{1}{2}$  pt.       $\uparrow$   $\frac{1}{2}$  pt.



$$f(x) = -3(x+2)^2 + 5$$

$$\begin{array}{r} -70 = -3(x+2)^2 + 5 \\ -5 \end{array}$$

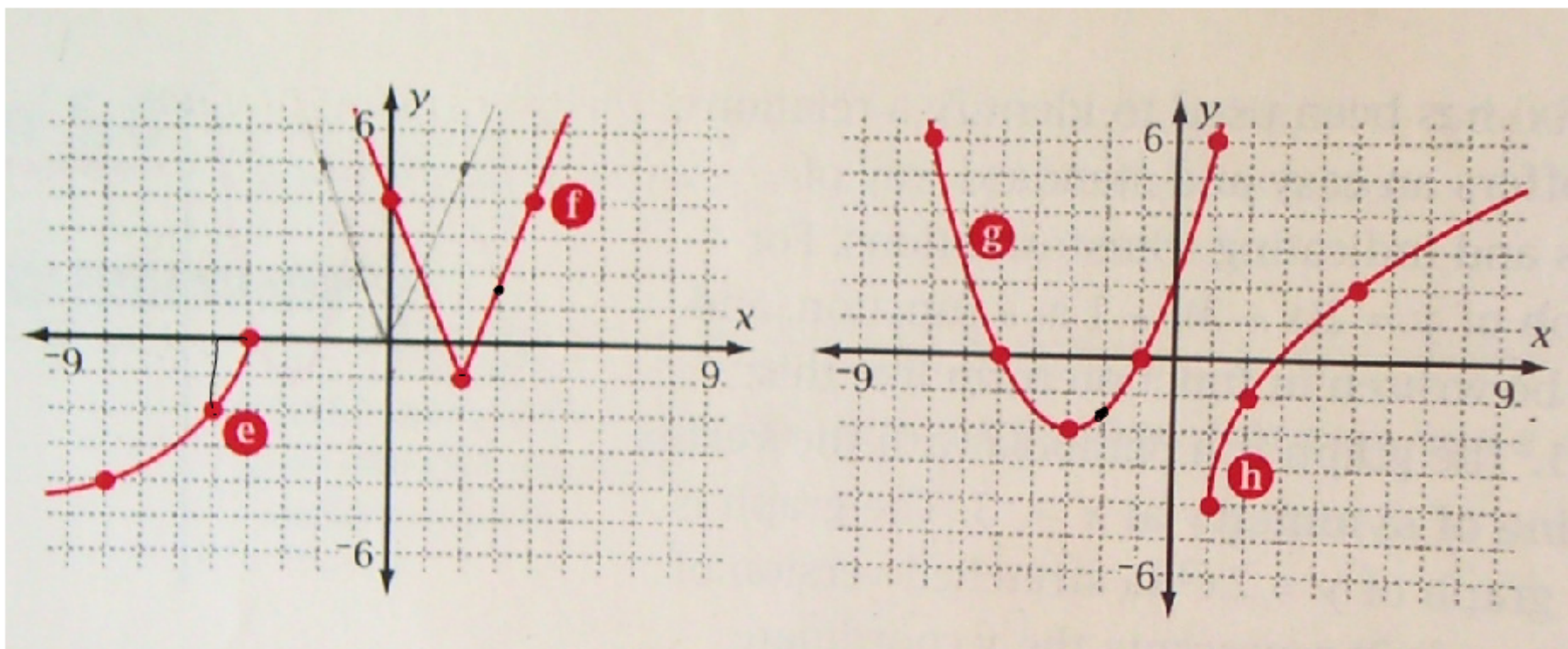
$$\begin{array}{r} -75 = -3(x+2)^2 \\ -3 \quad -3 \end{array}$$

$$\sqrt{25} = \sqrt{(x+2)^2}$$

$$\begin{array}{r} \pm 5 \\ -2 \quad -2 \end{array} = x+2$$

$$\boxed{x=3 \quad x=-7}$$

1 pt each



$$y = -2\sqrt{\quad} \quad y = 2.5| \quad | \quad y = \frac{1}{2}| \quad |^2 \quad y = 3\sqrt{\quad}$$

1. Suppose the function pictured is  $f(x)$ .

a.  $f(3) = -?$  - 4

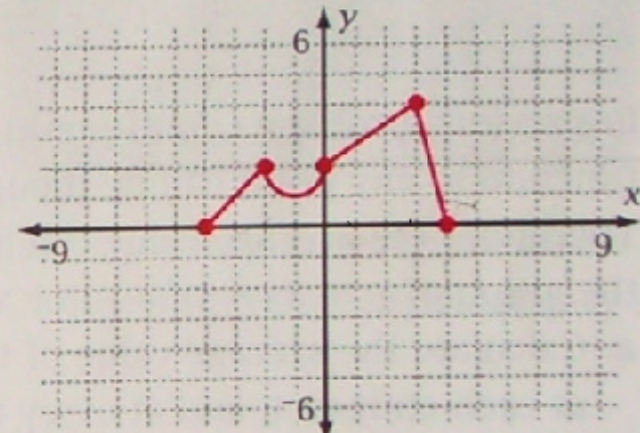
b.  $f(-2) = -?$  - 2

c. When is  $f(x) = 0$ ? -4, 4

d. When is  $f(x) = 2$ ? -2, 0, 3.5

e. What is the range,  $R_f$ , of  $f$ ?  $[0, 4]$

f. What is the domain,  $D_f$ , of  $f$ ?  $[-4, 4]$



Green Book

p. 239

#1, 3, 5, 6, 11

p. 250

#5, 7